

## OPERATIVES TRAINING PROGRAMMES IN INDIA

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During the last few years great changes have taken place in the fishing industry as a result of which production of fish in the world has increased enormously. From an insignificant trade employing tools and methods of primitive nature, fishing in many countries has become an important industry utilising complex modern vessels equipped with electronic equipment and operating in the high seas with highly mechanised fishing gear.

Modern fishing operations in contrast to the traditional methods require highly skilled man-power capable of working in teams where each member rely on his fellow-worker. To fulfil this part of the work in addition to a thorough knowledge of seamanship and navigation, a modern fisherman should be capable of operating various electronic devices, handling, making and mending of highly complex fishing gear, operating mechanical hauling devices, utilising complicated measuring instruments to measure thermoclines, currents etc. of the seas, and these operations often have to be performed under the most dangerous and difficult conditions. The responsibilities carried by the skipper

of such ships are particularly heavy and lack of knowledge and training of some skippers may be responsible for a number of difficulties which have arisen on the fishing grounds.

The technological development in fishing industry is still proceeding and materials, techniques, instruments, gear and vessels are being continuously improved. In most of the developed countries research and experimental fishing institutions are working full time for this purpose. Efforts are being made to train scientists, fisheries technologists, biologists, etc. In contrast a review of the existing facilities not only in India but also in most of the countries of the world will show that the training of personnel who must in the final analysis, implement the plans of the scientists by operating gear at sea, is grossly inadequate and very little is being done to improve this condition. It is no coincidence that some of the leading fishing countries like Japan, U.S.S.R. etc., have a very large net work of training establishments to train the technicians for fishing in the high seas. It can be said that trained operatives employing improved

gear and technique increase production effectively.

Though today only about 2.5% of the 90,000 fishing boats are mechanised, it is expected that during the next 5 to 6 years another 10,000 mechanised fishing vessels of different sizes and types may be added to the existing fleet. The present trend of development indicates that out of this at least 200 would be the class of vessels which require certificated men. This translated into man-power requirements would mean a demand of 200 skippers, 200 engine drivers, 200 fishing second hands, 40,000 fishermen, 50 marine engineers, 50 wireless operators apart from the supporting skilled men like mechanics, gear fabricators, boat building foremen etc.

As early as in 1946 training of personnel for high sea fishing engaged the attention of the Government of India and a scheme was initiated in 1947 by sending 8 candidates to Grimsby, U. K., for a 6 month institutional training followed by a two year training on the exploratory fishing vessels of the Government. This scheme has now been modified into a four-year in-vessel training course and a short institutional training in short spells where they received instructions in fish finding and capturing methods, chart work, workshop practicals etc.

Up to date, this scheme has produced about 14 skippers and 34 fishing second hands. 15 are under training. At the completion of the four year course, they not only have the proficiency in fish finding and capturing but also qualify themselves to appear for the competency examinations of the Ministry of Transport.

As well as its advantages, this scheme has certain limitations; important among these being the limitation on the number of candidates trained as it depends strictly on the number of suitable vessels available for

posting them for in-vessel training. Again, the method of learning the job is not really effective as there is neither time nor space on most of the fishing vessels to teach in-vessel trainees during the fishing operations. However, realising the urgent need and importance of organizing co-ordinated fisheries educational system to meet the demands of this developing industry, the Government of India appointed a Committee in 1958 under the Chairmanship of Dr. N. K. Panikkar, the then Fisheries Development Adviser to report on the man-power requirements, type of permanent educational system and the other pertaining details. This Committee recommended that organized institutional training in the operatives filed is essential and should be developed as early as possible and that the training of skippers, master fishermen, mates, engine drivers, boat and shore technicians of various kinds should be organized and brought within the framework of a training institute for fisheries operatives. The Committee also recommended that such an institute should be the linch-pin of the fisheries training centres already established or to be established in future. The Government of India accepted these recommendations of the Committee and established the Central Institute of Fisheries Operatives at Ernakulam.

This Institute was established in 1963 and commenced the courses in March 1964 and for the present offers courses for fishing second hands and engine drivers. As has been stated earlier, the aim of this Institute is to train operatives for high sea fishing and prepare personnel for fulfilling regulations under the Merchant Shipping Act, 1958. The Merchant Shipping Act, 1958 provides that every fishing vessel when going to sea from any port or place in India have:

- (a) if the vessel exceeds 25 gross tons but does not exceed 50 gross tons one certificated skipper  
and
- (b) if the vessel exceeds 50 gross tons, two hands, one with a certificate of skipper and the other certificated of second hand.

Regarding the engineering personnel, a vessel of 50 nominal horse power has to be in charge of one engineer duly certificated being an engineer of a fishing vessel, designated as the Chief Engineer, and if it is less than 50 nominal horse-power with at least one engineer duly certificated being an engineer of a fishing vessel, he shall be designated as the Chief Engineer, or with at least one Engine Driver of a fishing vessel duly certificated. It is further clarified that persons holding certificate of competency as first or second class engineers shall be deemed to be duly certificated and that nominal horse power of any ship means the horse-power of the engines of the ship calculated in the prescribed manner.

The candidates admitted for fishing second hands course, after the completion of the course, will obtain their competency certificates if they have the qualifying sea-time. The qualifying sea service has been prescribed as either

- (a) 36 months of qualifying service on a vessel of 25 gross tons  
or
- (b) 42 months of qualifying sea-time, out of which one year should have been on a vessel of 25 gross tons.

Similarly qualifying sea experience and workshop experience have also been laid down for the marine engineering personnel.

Now, additional courses for Gear Technicians, Boat Building Foremen, Wireless Operators, Shore Mechanics etc. have been initiated. The Institute has facilities now to train 40 hands in each of these two courses viz, fishing second hands and engine drivers and in total about 130 hands.

The fishing second hands and the engine drivers courses are for a period of 15 months out of which the first 3 months are utilised mostly for strengthening the basic education of the entrants. These candidates after the completion of the courses qualify to face the appropriate competency examinations conducted by the Ministry of Transport provided they have the required qualifying sea service as per the Merchant Shipping Act, 1958 as stated elsewhere. The courses for the Boat Building Foremen and the Shore Mechanics when started will be for a period of 15 months while those for Gear Technicians and Wireless Operators will be for 9 months and 3 months respectively.

The entrance qualifications for Fishing Second Hands Course prescribe that candidates

- (1) should have worked for about  $2\frac{1}{2}$  years on mechanised fishing vessels,
- (2) have completed about 11 years of schooling  
and
- (3) be within 17 to 25 years of age.

The other requirements remaining the same, sea experience of only 6 months is prescribed in the case of Engine Drivers.

Sight and physical fitness requirements are strictly enforced wherever applicable.

While framing the details of instructions particular care has been taken to the manning of and fishing with vessels equipped with all the modern fish finding and

capturing equipments. These modern vessels involving very high capital investment have to be operated economically to bring adequate returns commensurate with the investment. Adequate care has been taken to see that the instructions are framed with practical bias. During the course of 15 months, out of which as stated earlier, 12 months are spent in technical training. A broad break up of the time spent in some of the main subjects is indicated below:

- 1) Navigation & Seamanship – 300 hours
- 2) Fishing Gear Methods &  
Operation – 300 hours
- 3) Operation and maintenance of engines – 200 hours
- 4) Vessels training for navigation and seamanship and fishing operations – 900 hours

Similarly, the break up for engine drivers course is

- 1) Marine Engineering Theory– 200 hours
- 2) Drawing – – – 150 hours
- 3) Vessels and workshop practical – 1050 hours
- 4) Fishing & other allied subjects – 200 hours

Book-keeping has also been incorporated in the syllabi for both the courses.

Experience shows that the allotment of hours have to be kept flexible as this depends on the ability of the candidates which, to a considerable extent, is influenced by the different levels of the basic educational standards. The courses prepare the students to achieve proficiency to face competency examinations connected with the manning regulations under the Merchant Shipping Act. The syllabi and details of instructions are constantly under

review to suit the needs of the fishing industry. The system of training aims at developing fishermen who are fully efficient in fish finding and capturing with modern equipment and man complicated large fishing vessels in the high seas.

To derive the maximum benefit great care has to be taken in adopting suitable teaching methods. The Institute is developing teaching methods emphasising the use of audio-visual aids for fish finding, capturing and manning. Mechanical workshop equipped with lathes, drilling machines, welding machines and gear fabrication room form part of the facilities available at this Institute.

One of the main stumbling blocks in establishing efficient training organisations seems to be the lack of trained teachers and text-books. As an advance action towards creating more training facilities a programme to train teachers and prepare text books have to be initiated in an organised manner. Such a scheme to meet the demands of this Institute is being worked out and this scheme will be extended to meet the demand of all the training establishments of the country.

Teaching essentially should be directed more to the 'individual' than to the class room as the basic education and experience of the entrants to the operatives training may vary. This can be done only when a proper student – teacher ratio is maintained. Experience has shown that the most appropriate ratio is around 1:5 to 1:7. Even developed countries like Japan and U. S. S. R. where basic education of the entrants are higher do not seem to have exceeded this ratio.

Under the present circumstances in-vessel training sandwiched between institutional training seems to offer the best possibility for efficient training. There-

fore it is essential to provide this Institute with training vessels equipped with all the modern navigational, fish finding and fishing aids to operate trawls, purse seines, long lines etc.

Though the training imparted is basic and elementary it aims at sufficient proficiency for handling and fishing with small inshore vessels.

Entrance qualifications prescribed are that:

- 1) candidates should have attained the age of 17,
- 2) have basic knowledge of not less than 8 years in the school and
- 3) fishing experience of about 5 years in any type of fishing vessel.

Up-to-date more than 3000 hands have passed through these training centres and except for an insignificant number, are employed on the mechanised fishing vessels.

It is evident that one of the most important category of personnel to be trained in a mechanised fishing industry is fishermen. As a first step to establish centres to train fishermen a band of teachers from various maritime states were trained during 1955-56 under the assistance of the F. A. O. for a period of 8 months. There are now more than 20 training centres each imparting training 20 to 60 candidates for a period of 10 months.

The distribution of the training centres statewise is shown below:

Andhra Pradesh	—	1
Gujarat	—	3
Madras	—	7
Maharashtra	—	5
Orissa	—	1
Goa	—	1
Kerala	—	4
West Bengal	—	2
Mysore	—	1

Apart from the institutional courses for new entrants with some sea experience, up-dating courses for working fishermen to acquire knowledge and to prepare them for higher responsibilities have to be introduced. It is very evident that all these demands cannot be met with from one Institute. It is, therefore, envisaged to establish units well-equipped with men and material at the appropriate locations to train men who have qualifying experience but require technical know-how of the recent advances in fish finding and capturing methods. It is very essential that with the fast changing facilities towards efficiency the men who will be in charge of these operations should continue acquiring more and more knowledge. Modern fish capturing vessels demand exacting knowledge and require years of training. Men therefore have to be prepared step by step from a very early age.

The details of instructions include:

	Number of hours	
	Theory	Practical
1) The engine, the boat and their functions, dismantling and reassembling of the engines.	100	175
2) Handling and manoeuvring motor boats	...	150
3) Maintenance of boat and engines — washing, scraping, oiling, painting etc.	...	50
4) Construction, repair and preservation of various kinds of gear	20	100

5) Theory of fishing gear used with mechanised boats and fishing operations at sea with as many types of gear as possible.	100	300
6) Rules of the road, navigation and chart work.	50	75
7) Handling and preservation of fish	25	...
8) Economics of fishing and fisheries statistics, book-keeping, management	20	...
9) Development through co-operation	20	20
10) Ocean and its wealth – a brief account	20	...
11) Group discussions and visual aid	...	75
12) First aid, life saving at sea, swimming	40	75
13) Improved methods of marketing	25	...
Total	420	1020

One of the most fruitful forms of Governmental assistance on a national scale is to provide facilities for training at various levels. One of the most effective ways to strengthen these training programmes is to enlist the enthusiasm of the vessel owners in furthering these

programme as trained men are to the advantage of the industry. This does not yet seem to have been realised by the fishing industry. It is emphasised that training is the cheapest investment in increasing production.